OHIO AGRICULTURAL EXPERIMENT STATION
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Forestry Mimeograph No. 2

Growth and Stand Data from Continuous Inventory

By

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Experimental Forest No. 11 of the Forestry Department, Ohio Agricultural Experiment Station is on the Sanor farm in Columbiana County, Ohio. This is an all-aged, beech-maple selection forest of 20 acres which is cut annually. Six acres of permanent sample plots (30 plots of 1/5-acre) were established in the fall of 1946. The first re-measurement was made after four growing seasons. Subsequent measurements have been, and will continue, at one year intervals.

The first inventory found 32 sawlog size trees per acre (11.0" and up) with 6900 bd.ft. Four annual cuts removed 880 bd.ft. per acre, and growth plus ingrowth of 250 bd.ft. per acre per year brought the stand back to 32 trees with 7020 bd.ft. per acre after the fourth growing season.

The following table shows what took place in the stand during the fifth (1951) growing season:

Stand Inventories and Growth Data (Per Acre)
Net Volumes - International $\frac{1}{4}$" Rule

Species	2nd Inventory Winter '50-'51 No.	Vol.	Cut Bd.Ft.	Residual No.	Vol.	Growth Bd.Ft.	Ingrowth Bd.Ft.	3rd Inventory Winter '51-'52 No.	Vol.
H. maple	9.5	2645	-	9.5	2645	46.8	-	9.5	2692
Beech	8.8	2447	76	8.7	2371	73.2	-	8.7	2445
American elm	5.0	619	81	4.7	538	23.7	9.1	4.8	570
White ash	1.0	96	-	1.0	96	8.4	21.7	1.5	126
Yellow poplar	3.2	476	-	3.2	476	38.4	12.0	3.3	527
Basswood	1.3	158	-	1.3	158	6.4	7.7	1.5	173
All others	3.2	579	85	2.9	498	14.7	19.2	3.2	527
Total	32.0	7020	242	31.3	6777	211.6	69.7	32.5	7060

The 31.3 trees grew at an annual rate of 6.8 bd.ft. per tree, or 3.1 percent. This good growth rate can be attributed directly to the type of management applied in this woods. Another feature of this management program is the total absence of mortality; which is also an excellent index of the quality of management. The owners have a good eye for tree selection. They started many years ago with a grazed, high-graded woods and by judicious cutting have achieved an excellent state of management. The total cut for the past 20 years is 104,000 bd.ft., or an average of 5,200 bd.ft. per year. During the past five years the annual growth on the 20 acres has averaged 5,133 bd.ft. There has been an excellent balance between cut and growth.

Two additional facts are important to an evaluation of this growth data: (1) This stand is almost 80% beech and maple, two slow growers, and (2) hard maple is managed for sap production, which means its timber growth potential is seriously reduced.

Following is a tabulation by species of annual net volume growth per tree (excluding ingrowth) and annual growth percent for the 1951 growing season:

Species	Annual Bd.Ft. Growth per Tree	Annual Growth Percent
Hard maple	4.9	1.8
Beech	8.4	3.1
American elm	5.1	4.4
White ash*	8.4	8.8
Yellow poplar*	12.0	8.0
Basswood*	4.9	4.1
All others	5.1	3.0

*This table does not account for differences in diameter distribution. These three species are mostly small trees, thus accounting for the high growth percentages.